



General Assembly

Distr.
GENERAL

A/CONF/147/PC/3/Add.14
TD/B/AC.17/31/Add.14
30 March 1990

ENGLISH ONLY

TRADE AND DEVELOPMENT BOARD

Intergovernmental Group on the
Least Developed Countries
Seventh session
(Preparatory Committee for the Second
United Nations Conference on the
Least Developed Countries)
Geneva, 26 March 1990

SECOND UNITED NATIONS CONFERENCE ON THE LEAST DEVELOPED COUNTRIES

Preparatory process for the Conference

UNDRO disaster mitigation activities in or for the
benefit of the least developed countries

Contribution by the Office of the United Nations
Disaster Relief Co-ordinator (UNDRO) */

*/ This document has been reproduced as received and in the language of
submission only.

UNDRO Disaster Mitigation Activities In or For the Benefit of the Least Developed Countries.

UNDRO carries out several different types of disaster mitigation activities either in *Least Developed Countries (LDCs)* themselves, or for the benefit of LDCs. These include:

- Disaster management research projects
- National projects
- Regional, sub-regional, and international activities
- Symposia, seminars, and workshops
- Disaster management publications

Typical examples of such current activities, those carried out recently by UNDRO, follow:

1. UNDRO Disaster Management Research Projects.

"Preliminary Study on the Identification of Disaster-prone Countries Based on Economic Impact"

This research project, completed in January, 1990, was carried out primarily for the UNDP Governing Council, in connection with preparations for its 5th programming cycle. Several members of the Council had suggested that its calculations should include a supplementary consideration of whether or not a country is disaster-prone. At the request of UNDP/PCO, UNDRO undertook this preliminary study in order to determine whether it is feasible to develop such a quantitative measure of *disaster-proneness*.

The objective of the study was to attempt to devise a quantitative measure which will identify the degree to which a country is disaster-prone. Such a measure was to be based on objective, simple, universal criteria. Particular attention was paid in this study to *Least Developed Countries (LDCs)* (as well as to *Island Developing Countries (IDCs)*).

The result of the study was the development of such a measure, called a *disaster-proneness index* which although only preliminary, appears promising for UNDP's consideration in the 5th programming cycle. This will benefit LDCs by providing a basis for disaster mitigation efforts to be included in individual projects to be carried out in the development planning process for the benefit of those countries.

The index selected as a measure of disaster-proneness was the damage caused by the disaster as a percentage of its total annual Gross National Product (GNP). After empirical trials with several countries, a threshold of 1% of total annual GNP was decided upon in order for a disaster to be considered a *significant disaster*, and thus be included in the calculation of the index for a given country. This threshold appears to be sufficient to include most disasters which can be considered to have had a major effect on the country in question.

An index was calculated for every such disaster which occurred during the approximately twenty-year period January, 1970 to July, 1989, for which sufficient information was available either to compute or to estimate such an index. The index was calculated for each disaster which occurred during the period in question which equalled or exceeded the established threshold. A *Total Index* and an *Average Index* for each country were then computed as possible measures of its disaster-proneness.

The Total Index is the sum of the indices of each significant disaster which occurred in the country during the period studied. It thus measures the *total effect over twenty years* of damage suffered by that country, as a percentage of one year's total annual GNP.

The Average Index is the average of the indices of all significant disasters which occurred in the country during the period studied. It thus measures the effect of the *average significant disaster* which struck the country during the twenty-year period of the study, as a percentage of its total annual GNP.

Some 195 countries and territories were examined in the course of the study, including all forty-two defined by UNCTAD to be *Least Developed Countries (LDCs)* (as well as the fifty-one defined as *Island Developing Countries (IDCs)*). Of those, sufficient information was available, or could be estimated, to compute the total disaster-proneness index and the average disaster-proneness index for 133 of them, including twenty-nine of the LDCs (and thirty-three of the IDCs).

The results of the computations for the LDCs are summarized in the Tables on the following pages. (Copies of the complete study, including the results for *all* countries which were examined, can be obtained from UNDRO, Geneva.)

Table 1, "*Summary - LDC 'Disaster-Proneness' Index (1970-1989)*", lists all forty-two LDCs examined, in simple alphabetical order, and shows, *inter alia*, the Total Index and Average Index for each such country. This Table also indicates those LDCs for which insufficient information was available either to compute or to estimate an Index.

Table 2, "*LDC Summary by Index*", lists the LDCs in *descending order of Index*, once by *Total Index* and once by *Average Index*, for all those LDCs for which an Index could be computed or estimated. (Details on *each "significant"* disaster within each country, are included in the Annex to the complete report available from UNDRO.)

2. UNDRO National Disaster Mitigation Projects.

Table 3 lists some of the LDCs in which UNDRO has recently carried out, or continues to carry out disaster mitigation projects, including the names of the countries and descriptions of the projects.

3. UNDRO Regional, Sub-regional, Inter-regional, and International Disaster Mitigation Activities.

Table 4 lists some of the regional disaster mitigation projects which UNDRO has recently carried out, or continues to carry out, which either involve LDCs or are of benefit to LDCs. The Table includes the region and a description of the project.

4. UNDRO Symposia, Seminars, and Workshops in Disaster Management.

Table 5 lists some of the regional disaster management seminars and workshops which UNDRO has recently either organized, sponsored, or participated in. These seminars and workshops all included participants from LDCs, some of whom participated thanks to an UNDRO grant.

5. UNDRO Publications Dealing with Disaster Management.

Table 6 lists the kinds of publications produced by UNDRO which deal with disaster management and which are available and of benefit to LDCs in disaster mitigation programs in those countries.

TABLE 1: SUMMARY - LDC "DISASTER-PRONENESS" INDEX (1970-1989)

COUNTRY	POPULATION (1980)	PER CAPITA GNP (1980) TOTAL (\$MIO)	GNP (1980) TOTAL (\$MIO)	SIGNIFICANT DAMAGE (1% GNP)	NO. OF EVENTS	TOTAL	INDEX AVERAGE
AFGHANISTAN	15,940,000	\$ 170 (2)	\$ 2,710	\$ 27,100,000	6	27.10	4.52
BANGLADESH	88,513,000	\$ 130	\$ 11,030	\$ 110,300,000	7+	50.32+	7.19-
BENIN	3,479,000	\$ 290	\$ 1,020	\$ 10,200,000	2-	(1)	(1)
BHUTAN	1,273,000	\$ 80	\$ 100	\$ 1,000,000	0+	(1)	(1)
BOTSWANA	901,000	\$ 880	\$ 800	\$ 8,000,000	6	10.13	1.69
BURKINA FASO	6,161,000	\$ 200	\$ 1,250	\$ 12,500,000	4	191.23	47.81
BURMA	33,313,000	\$ 170	\$ 5,630	\$ 56,300,000	1+	1.71+	1.71-
BURUNDI	4,114,000	\$ 210	\$ 850	\$ 8,500,000	1-	(1)	(1)
CAPE VERDE	295,000	\$ 310	\$ 90	\$ 900,000	2	12.06	6.03
CENTRAL AFRICAN REP.	2,330,000	\$ 310	\$ 710	\$ 7,100,000	1-	(1)	(1)
CHAD	4,455,000	\$ 110	\$ 490	\$ 4,900,000	5+	92.04+	18.41-
COMOROS	347,000	\$ 290	\$ 100	\$ 1,000,000	3	61.18	20.39
DJIBOUTI	352,000	\$ 460	\$ 160	\$ 1,600,000	5+	9.82+	1.96-
EQUATORIAL GUINEA	341,000	\$ 180 (1981)	\$ 62 (1981)	\$ 620,000	1-	(1)	(1)
ETHIOPIA	31,065,000	\$ 130	\$ 4,080	\$ 40,800,000	7+	60.82+	8.69-
GAMBIA	574,000	\$ 360	\$ 210	\$ 2,100,000	2	14.79	7.37
GUINEA	5,425,000	\$ 280	\$ 1,520	\$ 15,200,000	1-	(1)	(1)
GUINEA BISSAU	773,000	\$ 170	\$ 130	\$ 1,300,000	0	0.00	0.00
HAITI	5,009,000	\$ 280	\$ 1,420	\$ 14,200,000	2+	9.21+	4.61-
KIRIBATI	59,000	\$ 390	\$ 20	\$ 200,000	0	0.00	0.00
LAOS	3,426,000	\$ 70	\$ 240	\$ 2,400,000	1+	17.98+	17.98-
LESOTHO	1,341,000	\$ 470	\$ 630	\$ 6,300,000	3-	(1)	(1)
MALAWI	6,037,000	\$ 190	\$ 1,160	\$ 11,600,000	1+	2.36+	2.36-
MALDIVES	152,000	\$ 260	\$ 39	\$ 390,000	0	0.00	0.00

TABLE 1: SUMMARY - LDC "DISASTER-PRONENESS" INDEX (1970-1989) (cont'd)

COUNTRY	POPULATION (1980)	PER CAPITA GNP (1980)	TOTAL GNP (1980)	SIGNIFICANT DAMAGE (% GNP)	NO. OF EVENTS	TOTAL	INDEX AVERAGE
MALI	6,699,000	\$ 180	\$ 1,230	\$ 12,300,000	3	22.52	7.51
MAURITANIA	1,523,000	\$ 400	\$ 600	\$ 6,000,000	4	41.15	10.28
MOZAMBIQUE	12,084,000	\$ 270	\$ 3,262	\$ 32,620,000	2+	2.65+	1.32-
NEPAL	14,640,000	\$ 140	\$ 2,040	\$ 20,400,000	3	16.84	5.61
NIGER	5,532,000	\$ 300	\$ 1,670	\$ 16,700,000	3+	21.53+	7.17-
RWANDA	5,168,000	\$ 220	\$ 1,150	\$ 11,500,000	3-	(1)	(1)
SAMOA, WESTERN	156,000	\$ 350	\$ 54	\$ 540,000	2-	(1)	(1)
SAO TOME & PRINCIPE	113,000	\$ 380	\$ 40	\$ 400,000	1-	(1)	(1)
SIERRA LEONE	3,474,000	\$ 300	\$ 1,030	\$ 10,300,000	0	0.00	0.00
SOMALIA	4,272,000	\$ 260	\$ 1,110	\$ 11,100,000	9-	(1)	(1)
SUDAN	18,681,000	\$ 360	\$ 6,740	\$ 67,400,000	1+	5.56+	5.56-
TANZANIA	18,534,000	\$ 270	\$ 4,890	\$ 48,900,000	0	0.00	0.00
TOGO	2,578,000	\$ 350	\$ 900	\$ 9,000,000	1-	(1)	(1)
TUVALU	8,000	\$ 630	\$ 5	\$ 50,000	0	0.00	0.00
UGANDA	12,630,000	\$ 200	\$ 2,490	\$ 24,900,000	6-	(1)	(1)
VANUATU	117,000	\$ 380	\$ 40	\$ 400,000	4	228.41	57.74
YEMEN ARAB REP.	7,039,000	\$ 430	\$ 3,000	\$ 30,000,000	1+	66.67+	66.67-
YEMEN, P.D. REP.	1,907,000	\$ 420	\$ 810	\$ 8,100,000	4	29.05	7.26

KEY TO SYMBOLS APPEARING IN TABLE 1:

N.A. = INFORMATION NOT AVAILABLE
 (1) = INSUFFICIENT INFORMATION AVAILABLE TO COMPUTE OR ESTIMATE INDEX
 (2) = ESTIMATE
 + = COULD BE HIGHER, DEPENDING ON MISSING INDEX INFORMATION
 - = COULD VARY, DEPENDING ON MISSING INDEX INFORMATION

TABLE 2 - LDC SUMMARY BY INDEX

DESCENDING ORDER BY TOTAL INDEX:		DESCENDING ORDER BY AVERAGE INDEX:	
1.	VANUATU (4) 228.41	1.	YEMEN ARAB REP. (1+) 66.67-
2.	BURKINA FASO (4) 191.23	2.	VANUATU (4) 57.74
3.	CHAD (5+) 92.04+	3.	BURKINA FASO (4) 47.81
4.	YEMEN ARAB REP. (1+) 66.67+	4.	COMOROS (3) 20.39
5.	COMOROS (3) 61.18	5.	CHAD (5+) 18.41-
6.	ETHIOPIA (7+) 60.82+	6.	LAOS (1+) 17.98-
7.	BANGLADESH (7+) 50.32+	7.	MAURITANIA (4) 10.28
8.	MAURITANIA (4) 41.15	8.	ETHIOPIA (7+) 8.69
9.	YEMEN, P.D. REP. (4) 29.05	9.	MALI (3) 7.51
10.	AFGHANISTAN (6) 27.10	10.	GAMBIA (2) 7.37
11.	MALI (3) 22.52	11.	YEMEN, P.D. REP. (4) 7.26
12.	NIGER (3+) 21.53+	12.	BANGLADESH (7+) 7.19-
13.	LAOS (1+) 17.98+	13.	NIGER (3+) 7.17-
14.	NEPAL (3) 16.84	14.	CAPE VERDE (2) 6.03
15.	GAMBIA (2) 14.79	15.	NEPAL (3) 5.61
16.	CAPE VERDE (2) 12.06	16.	SUDAN (1+) 5.56-
17.	BOTSWANA (6) 10.13	17.	HAITI (2+) 4.61-
18.	DJIBOUTI (5+) 9.82+	18.	AFGHANISTAN (6) 4.52
19.	HAITI (2+) 9.21+	19.	MALAWI (1+) 2.36-
20.	SUDAN (1+) 5.56+	20.	DJIBOUTI (5+) 1.96-
21.	MOZAMBIQUE (2+) 2.65+	21.	BURMA (1+) 1.71-
22.	MALAWI (1+) 2.36+	22.	BOTSWANA (6) 1.69
23.	BURMA (1+) 1.71+	23.	MOZAMBIQUE (2+) 1.32-

NOTES

1. THE FOLLOWING LDCS HAD NO SIGNIFICANT EVENTS DURING THE PERIOD 1970-1989, AND THEREFORE HAD A TOTAL INDEX = AVERAGE INDEX = 0.00 :

GUINEA BISSAU, KIRIBATI, MALDIVES, SIERRA LEONE, TANZANIA, AND TUVALU

2. FOLLOWING ARE THE LDCS EXAMINED IN THE STUDY FOR WHICH INSUFFICIENT INFORMATION WAS AVAILABLE EITHER TO COMPUTE OR TO ESTIMATE AN INDEX:

BENIN, BHUTAN, BURUNDI, CENTRAL AFRICAN REP., EQUATORIAL GUINEA, GUINEA, LESOTHO, RWANDA, WESTERN SAMOA, SAO TOME & PRINCIPE, SOMALIA, TOGO, UGANDA.

KEY TO SYMBOLS USED IN TABLE 2

- + = COULD BE HIGHER, DEPENDING ON MISSING INFORMATION ON INDIVIDUAL DISASTERS
 - = COULD VARY, DEPENDING ON MISSING INFORMATION ON INDIVIDUAL DISASTERS
 (n) = NUMBER OF SIGNIFICANT EVENTS WHICH OCCURRED DURING THE PERIOD 1970-1989

TABLE 3: UNDR0 NATIONAL DISASTER MITIGATION PROJECTS IN OR FOR THE BENEFIT OF LDOS

COUNTRY	PROJECT TITLE / DESCRIPTION	--- DATES ---	
		START	END
AFGHANISTAN: =====	1. Seismic hazard assessment and forecasting.	1985	1985
BANGLADESH: =====	2. Programme support to Office of Emergency Preparedness. Flood Prevention Project. Elaboration of a comprehensive five-year program in disaster preparedness. (Details included in Secretary-General's Report.)	1/90	2/90
CHAD: =====	Strengthening of Relief Co-ordination and Information Centre for Emergencies through installation of computer system.	1989	1994
DJIBOUTI: =====	Update the Djibouti disaster management plan, review additional human resources, equipment, and coordination mechanisms required to facilitate its effective implementation.	1985	1985
GUINEA: =====	Emergency component of National Reconstruction Programme.	1989	1989
HAITI: =====	1. Disaster mitigation project.	1985	1985
	2. Assist National Pre-disaster Planning and Relief Office to develop its capacity in disaster preparedness.	1987	1987
	3. Disaster preparedness and prevention project.	1989	1989
MALDIVES: =====	Review preparedness and prevention measures in connection with coastal flooding. (Details included in Secretary-General's Report.)	1990	1992
MALI: =====	National disaster preparedness and prevention planning	1988	1988
MOZAMBIQUE: =====	Strengthening national disaster prevention and counter-disaster operations. Advice on assessment of vulnerability to floods and drought, formulation of disaster prevention and preparedness plans, organization of disaster management units, definition of responsibilities, operational planning and in-service training, and related matters.	1985	1985
NEPAL: =====	1. National disaster preparedness and prevention planning	1984	1984
	2. Institutional Support to Disaster Preparedness and Relief Plan. Assist the Ministry of Home, and the Special Disaster Unit of the Ministry, in the development of their National Disaster Preparedness Plan. Arrange for training of staff of Unit and organize in-country training seminars. An emergency Control Centre has been developed to improve communication and coordination mechanisms in times of crisis.	1985	1985
NIGER: =====	Disaster mitigation project.	5/87	12/90
SUDAN: =====	Establishment of disaster management center. Specify, acquire computer equipment, develop software, install system and train staff.	1987	1987
VANUATU: =====	Inter-agency mission, followed by project on improvements in national disaster preparedness structure.	1985	1985

TABLE 4: UNDR0 REGIONAL, SUB-REGIONAL, AND INTERNATIONAL DISASTER MITIGATION ACTIVITIES

REGION	PROJECT TITLE / DESCRIPTION	--- DATES ---	
		START	END
AFRICA: =====	Regional meeting on Disaster Prevention and Preparedness in Africa. Measures to mitigate harmful impact of disasters other than drought on economic and social development. (Several LDC participants.)	1984	1984
AFRICA (WEST AND CENTRAL): =====	Participation in "The Institution and Co-ordination of National Contingency Plans for Emergencies Associated with Industrial Installations in the West and Central African Region", and in regional workshop on this subject. (Several LDCs involved.)	1984	1984
ASIA: =====	Administrative Staff College of India. Collaboration in training and research activities in disaster management, both in curriculum development and sponsorship of regional participants in their training courses. (Benefits LDCs.)	1977	--
ASIA: =====	Asian Disaster Preparedness Centre (ADPC). The Centre was created as an UNDR0 collaborating centre as part of the Asian Institute of Technology in Bangkok. It is a regional training centre in disaster management and receives ongoing support from UNDR0. (Benefits both LDCs and IDCs.)	1986	--
CARIBBEAN: =====	Pan-Caribbean Disaster Preparedness and Prevention Project. Multi-agency project covering 29 island countries and territories in the Caribbean, for disaster prevention, preparedness, and communication. (Participating countries include mostly IDCs, some of which are also LDCs)	9/81	12/90
EUROPE: =====	Pisa Emergency Relief Goods Stockpile. Creation, expansion of UNDR0 warehouse to pre-position stockpiles of emergency relief goods in the United Nations Supply Depot in Pisa, Italy. (Benefits both LDCs and IDCs.)	1984	--
INTER-AGENCY: =====	Panel on Tropical Cyclones. Develops disaster prevention and preparedness projects, including workshops and seminars, on tropical cyclones. (Benefits both LDCs and IDCs.)	1974	--
INTER-AGENCY: =====	Regional Seminar on Disaster Preparedness.	1984	1984
INTER-AGENCY: =====	United Nations Industrial Development Organization (UNIDO). Collaboration in studies to reduce hazards created by industrial activities. (Benefits LDCs.)	1985	1985
INTER-AGENCY: =====	United Nations Environment Programme (UNEP). Joint UNEP/UNDR0 production of "Compendium on Disaster Prevention and Mitigation" ("Preparedness Aspects" published 1984). (Benefits both LDCs and IDCs.)	1984	--
INTER-AGENCY: =====	Collaboration in studies on reducing the effects on the environment which result from major accidents. (Benefits both LDCs and IDCs.)	1985	1985
INTER-GOVERNMENTAL: =====	Typhoon Committee. An inter-governmental organization to reduce the effects of typhoons through improved forecasting of typhoons and floods, and disaster prevention and preparedness. (Benefits both LDCs and IDCs.)	1968	--

TABLE 4: UNDR0 REGIONAL, SUB-REGIONAL, AND INTERNATIONAL DISASTER MITIGATION ACTIVITIES (cont'd)

REGION	PROJECT TITLE / DESCRIPTION	--- DATES ---	
		START	END
INTER-GOVERNMENTAL: =====	TOPEX (Typhoon Operational Experiment). Participation in Warning Dissemination and Information Exchange component of TOPEX, a project of the Typhoon Committee. (Benefits both LDCs and IDCs.)	1981	1984
INTERNATIONAL: =====	International Programme for the Protection of Urban Centres from Earthquakes. Programme to train and inform specialists and the public on measures to reduce earthquake losses in densely-built urban areas constituting homogeneous or continuous structural systems. (Benefits LDCs and IDCs.)	1984	--
INTERNATIONAL: =====	International seminar on post-earthquake measures for structural engineering and physical planning.	1985	1985
INTERNATIONAL: =====	Draft Convention on Removal of Legal Obstacles to the Delivery of Emergency Relief Supplies. Proposed convention to expedite the delivery of relief supplies, submitted to Thirty-Ninth Session of General Assembly. Revisions in progress. (Benefits LDCs and IDCs.)	1984	--
INTERNATIONAL: =====	International Decade for Natural Disaster Reduction. To provide a framework for national and international projects on disaster mitigation. Participation in preparations for the Decade, including the temporary Secretariat and acting as the United Nations focal point for Decade activities. (Benefits LDCs and IDCs.)	1987	--
SOUTHERN AFRICA: =====	Strengthening of disaster preparedness. (Includes Lesotho, Malawi - both LDCs - and Zimbabwe)	8/90	7/92
SOUTHERN ASIA: =====	Disaster Management Training Programme for South Asian Countries. Financing of participation of disaster relief officials from several countries, including LDCs.	1983	1986
SOUTH PACIFIC: =====	Disaster Preparedness and Prevention Programme. (Includes mostly IDCs; some are also LDCs)	3/90	2/92
SOUTHWEST INDIAN OCEAN: =====	Tropical Cyclone Committee for the Southwest Indian Ocean. Regional body (eight countries) to reinforce national capabilities in regional cooperation in forecasting tropical cyclones and in the dissemination of warnings. (Benefits both LDCs and IDCs.)	1984	1984
	Training seminar in disaster prevention and preparedness.	1984	1984

TABLE 5: UNDRO DISASTER MITIGATION SYMPOSIA/SEMINARS/WORKSHOPS

(Not mentioned elsewhere under specific projects)

REGION	PROJECT TITLE / DESCRIPTION	DATE
EUROPE: =====	Ibero-Maghrebian Seismic Project. Seminar series of Ibero-Maghrebian Working Group of the European Seismological Commission to promote and co-ordinate research on the seismic characteristics of the area and on the reduction of losses from earthquakes in the region.	1983
INTER-REGIONAL: =====	Seminar Series on Earthquake Mitigation. Inter-regional series of seminars for developing countries, held in the USSR, on earthquake risk reduction and disaster management. (Participants include representatives of several LDCs.)	1986
	1. Seminar on Assessment of Earthquake Risks.	10/86
	2. Seminar on Engineering Aspects of Earthquake Risk Mitigation.	10/88
	3. Earthquake Disaster Management Project/Seminar.	10/89
	4. Assessment of Geological and Geophysical Hazards Project/Seminar.	10/90
PACIFIC: =====	Workshop on Post-disaster Evaluation for the Pacific Islands. (Benefits both LDCs and IDCs.)	1985

TABLE 6: OTHER UNDRO ACTIVITIES BENEFITTING LDCS - UNDRO PUBLICATIONS

(Not mentioned elsewhere under specific projects)

PUBLICATION/SERIES	DESCRIPTION
COMPENDIUM: =====	"Compendium on Disaster Prevention and Mitigation. UNDRO/UNEP Compendium of Current Knowledge". Twelve volumes.
GUIDELINES: =====	"Guidelines for Disaster Prevention". Seven volumes.
TECHNICAL REPORTS: =====	Series of technical monographs, manuals, reports, bulletins, etc., on new technological developments in disaster management, computerized data bases of disaster management information, the use of satellites in disaster situations including emergency communications, etc. Nineteen such documents currently in print.
"UNDRO NEWS": =====	Bi-monthly publication containing articles on disaster prevention technology, pre-disaster planning, public education, assessment of relief needs, etc.
OTHER: =====	Other documents, brochures, etc., dealing with UNDRO and its functions. Sixteen such documents currently in print.
FILMS: =====	Production of a series of video films for use in disaster preparedness and prevention.